

Mail Stop: APPEAL BRIEF - PATENTS

PATENT  
4001-1220

IN THE U.S. PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of	Appeal No.
Robert GREINER et al.	Conf. 3850
Application No. 10/582,215	Group 1783
Filed June 8, 2006	Examiner P. Khatri
METAL/PLASTIC HYBRID AND SHAPED BODY PRODUCED THEREFROM	

**REPLY BRIEF**

MAY IT PLEASE YOUR HONORS: February 23, 2011

The Examiner's Answer of December 23, 2010 did not appear to appreciate the Appellant's arguments regarding specific features of MATSUMOTO, NAKAZAWA and KOSUGA. These features are discussed in detail below.

**(i) MATSUMOTO teaches away from fibers or copper fibers.**

The Examiner did not appreciate that, taken as a whole, MATSUMOTO teaches away from the use of fibers.

MATSUMOTO discloses fibers as possible fillers. However, MATSUMOTO notes that: "fibers may generate anisotropy when the electrically conductive material is formed by injection molding" (paragraph [0023] of MATSUMOTO; emphasis added.)

Injection molding appears to be the intended manufacturing method by MATSUMOTO. For example, MATSUMOTO discusses the problems

involved with this method, and sets out to solve these problems ([0003]-[0005]). The general description of invention focuses on injection molding ([0050]-[0060]). Indeed, with respect to the "three dimensional metal net structure in the filler" described in [0059], MATSUMOTO states that the resin for this structure is preferred "because of the relative ease in injection molding or relatively easy availability." Consequently, fibers are not suitable for achieving this structure with the resin.

Moreover, as also noted in the main brief, every example shown by MATSUMOTO, i.e., embodiments 1-7 beginning at [0076], involve co-injection molding. The only mention of fibers (copper fibers) is in comparative examples 1 and 2, neither of which involves injection molding.

Thus, taken as a whole, it appears that fibers are unsuitable for the focus of MATSUMOTO.

Similarly, MATSUMOTO fails to teach copper fibers forming a fiber network, as stated in the main brief. For example, present claim 9 includes a fiber network formed by copper fibers which are present jointly with a metal compound, and claim 19 includes copper fiber fused with a lead-free metal compound to provide a fiber network. The three dimensional metal net structure mentioned in MATSUMOTO does not appear to be suitable for fibers, and MATSUMOTO fails to teach a fiber network, let alone one in which the fibers are present jointly with a metal compound.

**(ii) NAKAZAWA fails to teach a fibers and low melting point metals for the reasons stated in the rejection.**

MATSUMOTO discloses fillers at 50-95%, not fibers.

However, as discussed in the main brief, the reasons for introducing the combination of fibers and low melting point metals into MATSUMOTO was that NAKAZAWA discloses the combination "has longer lasting conductivity as well as being environmentally friendly." These benefits disclosed by NAKAZAWA, however, result from a specific proportion of the metal, the fibers and 30-98% thermoplastic resin (See, e.g., the Problem and Solution set forth in the Abstract).

Thus, as Appellants argued in the main brief, one would have had no expectation of success, i.e., attaining the desired properties described by NAKAZAWA, by approaching the claimed 10-25% thermoplastic resin.

**(iii) KOSUGA does not teach the claimed fibers.**

The Examiner's Answer took the positions that the fibers must be within the range of 3 to 10 mm in order to exhibit desired shielding and conductive properties and that bundle of fibers are in a uniform dispersion after molding.

As noted in the main brief, KOSUGA discloses pellets of 3-10 mm length having bundles of 1,000 to 10,000 fibers, with each fiber having a thickness of 8 to 50µm. There is no mention

of the fiber length. (See, e.g., col. 2, lines 63-68, column 3, lines 6-12 and lines 42-49, and col. 4, lines 3-21.)

While a uniform dispersion of the fibers in the molded resin does appear to be suggested (See col. 2, line 63 to col. 3, line 18), these fibers, as noted in the main brief, are indeed without any linking metal materials as a result of KOSUGA impregnating the bundles during formation of the pellets. This bundle of fibers uniformly dispersed within the resin is contrary claimed copper fibers (as recited in independent claims 9, 16 and 19), which are joined or linked with a low melting lead-free alloy, i.e., "the copper fiber is fused with the lead-free metal compound to provide a fiber network".

**(iv) Conclusion**

The above discussion is believed to underscore that the remaining rejections of the claims on appeal are improper and should be reversed. Such action is accordingly respectfully requested.

Respectfully submitted,

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